HALLETT'S POINT.

The Great Engineering Task at Hell Gate.

GENERAL NEWTON'S REPORT.

The Work Nearly Completed on a Third of the Estimated Cost.

Necessity for Prompt Appropriations by Congress.

HOW THE BLASTING WILL BE DONE

WASHINGTON, Nov. 21, 1874.

The following is the annual report of General Newton, of the Engineer Corps, in charge of the removal of obstructions in the East River, including Hell Gate. The table exhibits the lengths of tunnels and galleries excavated at Hallett's Point at the end of the fiscal year, June 30, 1874:—

HEADINGS AND GALLERIES.

	Feet.		Feet.
No. 1	296.36	No. 5b	66.25
No. 2	18[illegible].76	No. 5c	50.25
No. 3	199.98	No. 6a	207.58
No. 4	194.53	No. 6a (branch)	15.75
No. 5	191.25	No. 6b (branch)	146.80
No. 6	224.08	No. 6c (branch)	172.44
No. 7	230.58	No. 6d (branch)	50.60
No. 8	213.92	No. 6e	44.55
No. 9	225.59	No. 6f	27.00
No. 10	257.65	No. 7a	75.75
No. 2a	163.27	No. 10a	180.85
No. 2b	102.04	No. 10b	184.28
No. 2c	143.07	No. 10c	130.65
No. 2d	48.40	No. 10d	16.25
No. 2e	116.10	No. 10g	19.50
No. 3a	75.88	Galleries	2,394.20
No. 5a	129.51		
Total			6,780.67

The work was suspended for want of funds about the middle of November, 1873.

The details of operations for the months of July, August, September, October and part of November, 1873, are as follows.

Linear feet of drivings of tunnels and galleries		896.35
Cubic yards removed		4,648
Feet of holes drilled by machines (Burleigh drill)	43,742	
Feet of holes drilled by hand	618	
		44,360
Average number of feet of drilled holes to each cubic yard		9.50
Average number of pounds of nitro-glycerine to each cubic yard		1.10
Number of blasts fired		9,218
Pounds of nitro-glycerine		4,850
Pounds of giant powder		560.50
Pounds of black powder		1,406
Feet of Bickford fuse		39,904
Average feet of holes drilled by each machine per shift of eight hours		30.04
Average depth of holes, feet		4.8
Average cost of linear foot of hole drilled by machines, cents		36.9
Number of drills sharpened for Burleigh drills		12,116
Average cost of sharpening a drill, cents		8.70
Average number of feet drilled to each sharpening		3.60
Expenditure of steel to each foot of hole drilled, ounce		0.44

The appropriations for removing obstructions in the East River and Hell Gate are not entirely devoted to the tunnels and galleries at Hallett's Point, a considerable amount having been expended for the construction, maintenance and the operating of the steam-drilling scow, which has been at work, at various periods, upon Diamond and Coenties reefs, in East River, and upon Frying Pan and Pot Rock, in Hell Gate. There are certain rocks in Hell Gate, as Sheldrake and Way's Reef, which should be removed prior to the completion of the reef at Hallett's Point, because the existence of the latter reef would protect the machine from rapid currents, and, what is of more importance, from violent collisions. Coenties Reef, which has been, it is thought, thoroughly broken up, requires but a small sum to complete its removal to a depth of twenty-four feet. The present least depth above the mass of broken stone is twenty-one and a half feet. It is economical, likewise, to continue the use of the drilling scow in blasting the channel rocks, on account of the necessary deterioration of the scow from the progress of decay—a process which is equally rapid whether the apparatus is kept at work or not. From the expediency, as just shown, of employing the steam-drilling scow a proportion of each appropriation must necessarily be diverted from the work at Hallett's Point, and the amount annually granted—$225,000—is found to be entirely too limited for the economical or rapid progress of the important operations to which this sum is applied. The condition of the work at Hallett's Point is such that there can exist no reasonable doubt of its entire success, and, therefore, another similar work, intended for the removal of the Middle Reef, and including reefs, under various designations, as Flood Rock, Gridiron, Hen and Chickens and Negro Head, should be early commenced, as by its removal the width of the channel would be increased from 600 to 1,200 feet, and the most formidable obstruction to navigation, which exists at Hell Gate, would be obliterated.

ADDITIONAL EXPENDITURE NECESSARY.

For the reasons above given I ask an appropriation of $600,000 as the sum which could be profitably and economically expended during the year.

The discussion of the last steps to be taken in the removal of the rock has been postponed until the exploration of the whole area of Hallett's Point Reef, by means of tunnels and galleries, should have been first completed. This is nearly done, and it is proper to state in general terms what now appears to be the most rational mode of procedure. There have been two modes suggested. First, to excavate a chamber or cavity sufficiently large and deep to receive the whole body of the débris, and this mode would require the removal of all the stone piers supporting the roof of the excavation, and the substitution therefor of artificial supports of little bulk. This plan, which appears plausible, as well as complete, would, in my opinion, be inapplicable at Hallett's Point. An immense work would remain to be done in taking down the existing large piers under the roof and in sinking considerably the floor lines to provide a sufficient cavity; the volume of which should be, at the very least, one and a half times the solid contents of the roof. The nature of the stratification, in thin verticle sheets, renders the work of removal of the piers subject to grave accidents, due to unexpected results, during the blasting process. If these pieces could be removed by the use of the pick, as was done at Blossom Rock, where the rock was of peculiarly easy manipulation, one of the dangers of removing the piers would be obviated, but the rock is hard at Hallett's Point, and the constant application of blasting is required. Again, to carry out the system of providing a chamber or cavity, the piers, as well as the supports to replace them, must have considerable altitude, in some places thirty-five to forty feet, and this altitude would add incalculably to the dangers incident to their removal.

These difficulties and others have formed the subject of consideration for years past; but until the work of the tunnels and galleries used to explore the whole rock and ascertain its condition should be perfected it did not seem pertinent to enter into the present discussion, which really concerns only the last stage of the work, while, on the other hand, it was probable that a more mature judgment, based upon a longer experience, would result from the course adopted.

THE MODE OF REMOVING ROCK

by providing a receptacle large enough to receive the roof has never been applied. It was partially attempted at Blossom Rock, a very small reef, where, if anywhere, the process would have been applicable, but the engineer, Mr. Von Schmidt, abandoned this scheme before it was half perfected, and after blowing up the rock had to remove the débris with grapples or divers. The expense by such process, too, at Hallett's Point would, in my opinion, be much greater than by the second method, which consists in driving a system of tunnels and galleries having proper drainage, to obtain places for charges of explosives, and in disposing of the débris by transportation to other points. In a work upon the removal of Blossom Rock, published by the Engineer Department, there are found two projects, the one by General B. S. Alexander, of the Corps of Engineers, by means of the second method before described, and of date anterior to the project of Mr. Von Schmidt described in the same volume, and which differed from the former only in removing the piers or walls between the tunnels, and in providing a deep chamber or cavity to receive the débris. The useful idea of perforating the rock by means of tunnels, at least, was evidently borrowed by him from General Alexander, and Blossom Rock was removed by the latter's process; for Engineer Von Schmidt declined to carry out his own, and had to remove the débris afterward by artificial means. Prior to the date of General Alexander's letters—probably as much as six months—I was engaged in a discussion of the feasibility of removing certain channel rocks in this locality, by using an iron cylinder to reach from the surface of the water to the rock and working in this to perforate a shaft into the body of the rock and drive a system of galleries where charges of explosive compounds to blow up the whole mass could be placed. This process was not applied to the channel rocks for the reason that in this harbor the iron shaft would be continually exposed to collisions and might require a mass of material to secure it from such accidents out of all proportions with the rocks to be removed. But in 1869, as soon as sufficient funds were granted for large operations, the coffer dam at Hallett's Point was constructed, preparatory to tunnelling that reef. At this locality, besides the great extent of the rock, there was no danger to be apprehended from collisions.

THE MODE OF BLOWING UP

the reef at Hallett's Point would generally be this:—To perforate from the inside each pier with drill holes entirely or partly through its mass, a sufficient number of these being provided to complete the destruction of the pier when fully charged. The charges in the different holes of the same pier to be connected together, and a fuse composed of a quick explosive to connect the system of charges in each pier with those of the neighboring piers. By this mode the communication of heat or the electric spark to a few centres of explosion would suffice to propagate it through the whole system, because the explosion of the connecting fuse would advance more rapidly than the demolition of the rock. In addition to the charges in the piers, others confined in strong vessels might be placed in the inside close against the roof, and be shored from the floors of the galleries, to produce greater effect. The piers might be blown down by charges placed in contact with them; or in the galleries large charges might be placed, sufficient to effect the demolition, but much larger amounts of explosives would be required in such process; whereas the proximity of the work to habitations demands not only that a limited amount of charge be used, but that it be so confined as to perform local work only. Water tamping by flooding the galleries will be used to prevent the flying of fragments of rock. The principle of water tamping was, I believe, first used by Maillefert in surface blasting upon the rocks in this harbor in 1851 and 1852 and subsequent years, and all engineers who have been since engaged in the removal of submarine rocks have used it.

It is designed to use the quick explosives, principally if not exclusively, in the demolition of the works at Hallett's Point, and they should be confined in tubes, metallic, gutta percha or rubber. As it may require several weeks to charge the system of holes and their connections, if nitro-glycerine or other compounds of which it forms a part be used in metallic tubes, danger might result from corrosion or from coupling these together. If nitro-glycerine be used in metallic tubes it might be best to fill these after they have been set up and connected.

The difficulties above sketched would not arise if the tubing be composed of gutta percha or rubber. Besides the advantages already given as pertaining to the latter description of tubing, another, that of freedom from leakage would be more readily secured, and this consideration is a matter of first importance when nitro-glycerine or the compounds in which it enters are used, though not so if gun cotton be the explosive. Captain William H. Heuer, Corps of Engineers' Assistant, has continued in the superintendence of the operations at Hallett's Point, where his services have been faithfully and effectively performed.

STEAM-DRILLING SCOW.

The operations of this machine were confined to Coenties Reef, commencing work June 25, and being laid up December 15, 1873. The cause of suspension of work on that date was the exhaustion of funds available for the work, and was particularly unfortunate, as but little additional cost was needed to bring the level of the rock to the depth required, and there was apparently nothing further to be done than to remove broken rock. The least depth, which is confined to a small heap of loose stone, is 21½ feet at mean low water, and the depth proposed is from 24 to 25 feet. During the period of operations 307 holes, amounting to 2,629 lineal feet, were drilled. The diameter of holes at the top was generally 4½ inches and at bottom 3½ inches. The amount of nitro-glycerine expended was 17,127 lbs., and this included likewise the charges of 39 surface blasts. The amount of stone grappled and removed from the reef was 2,805 cubic yards, and this does not include the amount, which is unknown, raked from the surface into the deeper water on the sides of the reef. The operations of the past season were under the superintendence of Mr. J. H. Striedinger, civil engineer, and were faithfully and skilfully conducted. During the present season the machine will be put to work upon Sheldrake and Way's Reef, in Hell Gate.

THE ESTIMATES.

The estimate of January 21, 1867, for the removal of certain obstructions in Hell Gate, Hallett's Point, the Middle Reef and smaller rocks, as Pot Rock, Frying Pan, Way's Reef and Sheldrake, amounted to $8,692,645. The mode of operation was drilling into the surface of the rocks, blasting and removing the débris, and the estimate per cubic yard was $48 28—a rate which is thought to be correct for the operations in question. At a later date, January 3, 1870, a new estimate, based upon the process of tunnelling the larger reefs, as Hallett's Point and the Middle Reef, and removing the smaller reefs by drilling from the surface of the water was made, and the average rate per cubic yard fixed at $15 as a minimum and $20 for the maximum. The quantities in the Middle Reef and channel, as heretofore determined from old surveys, though only approximate, must be retained, as there are no surveys of recent date sufficiently advanced to furnish a more correct volume.

Reefs at Hell Gate, 234,491 cubic yards, $20	$4,689,820
Diamond and Coenties reefs, letter of March 2, 1868	449,300
Total	$5,139,120

The estimate for Diamond and Coenties reefs, in East River, should here be added, as it did not appear in the other reports cited above, which had reference to Hell Gate only.

In conducting the surveys of the reefs and smaller rocks each sounding was separately located by instruments. The rapidity of the tides caused a suspension of the soundings except during the periods of slack currents.

Amount allotted or specifically appropriated		$1,440,000 00
Deduct amount reverted to United States Treasury		3,158 55
Total		$1,436,841 45
Balance on hand July 1, 1874		228,922 28
Expended July 1, 1874		$1,207,919 17

EXPENDITURES CLASSIFIED.

Excavations at Hallett's Point	$660,427 21	
Construction and expenses of steam drilling scow operating upon Diamond and Coenties reefs, East River, and Pot Rock and Frying Pan, Hell Gate	365,228 98	
Amount paid B. Maillefert and others under contract for work upon Sheldrake and Way's Reef, Hell Gate	69,427 55	
Engineering expenses, including surveys of Diamond and Coenties reefs, East River, Hallett's Point, Middle Reef, Pot Rock, Frying Pan, Way's Reef, Sheldrake, scaly rocks, &c., in Hell Gate, and expenses of steamers	112,785 43	
		$1,207,919 17

The work for the present season will be the continuation of the tunnels and galleries at Hallett's Point and the operations of the steam drilling scow upon Way's Reef and Sheldrake, in Hell Gate.

THE HUDSON RIVER TUNNEL.

Legal Proceedings Commenced—An Order Issued by Judge Bedle—Shall the Construction Be Prevented by the Delaware and Lackawanna Company?

Proceedings have at last been commenced in the courts of New Jersey to prevent the construction of the tunnel under the Hudson River, from Fifteenth street, Jersey City, to some point not yet determined between Christopher and Twentieth streets, New York. Mr. Henry S. White, counsel for the Hudson River Tunnel Company, applied to Judge Bedle for an order to appoint commissioners to assess the damages sustained by the owners of land at Jersey City. In answer to this application the following order has been issued by Judge Bedle:—

State of New Jersey, County of Hudson, ss.:—Whereas on November 21, 1874, the Hudson Tunnel Railroad Company, a corporation organized under and by virtue of an act of the Legislature of the State of New Jersey entitled "An act to authorize the formation of railroad corporations and regulate the same," approved April 2, 1873, and an act entitled "An act to extend the time for completion of the Hudson Tunnel Railroad," approved March 21, 1874, made application to me, Joseph D. Bedle, a Justice of the Supreme Court of the State of New Jersey, by their petition in writing, setting forth, among other things, under the oath of De Witt C. Haskins, President and agent of the said Hudson Tunnel Railroad Company, that the articles of the association of said company, made and executed in due form, were filed in the office of the Secretary of State on January 25, 1873, and that the said company requires that tract of land known as Fifteenth street (and on a map of Jersey City, Hudson county, N. J., 1861, R. C. Bacot, City Surveyor, known as North Seventh street), from Provost street to the State line. The said strip of land required by the said company is a strip about thirty-two feet in width and about 1,909 feet in length, said land to be used for constructing a tunnel, with railroad track in said tunnel, said tunnel to be about twenty five feet in diameter and at no place to come nearer the surface than fifteen feet, and from that to thirty-five feet at the water. That said company also require, during the construction of said tunnel and roadway, the right to occupy a portion of Fifteenth street; dimensions to be a uniform width of fifty feet and 150 feet in length, running backward from the shore line of the Hudson River, westwardly along said street, for the purpose of sinking thereon a working shaft thirty feet in diameter and about sixty-five feet in depth, and to erect a temporary building over said shaft in the construction and use of their railroad upon the route determined upon; and that the said company and the parties claiming to be the owners could not agree; and whereas a certain survey has been filed in the office of the Secretary of State which said land the Morris and Essex Railroad Company, a corporation of the State of New Jersey; and the Delaware, Lackawanna and Western Company, a corporation of the State of Pennsylvania and lessees of the Morris and Essex Railroad Company; and New Jersey Shore Improvement Company, a corporation of the State of New Jersey, claim to have an interest in, and, therefore, prayed that I would appoint three disinterested, impartial and judicious freeholders, who reside in the county of Hudson aforesaid, Commissioners to examine and appraise the said land and materials, and to ascertain the damages to be paid by the said the Hudson Tunnel Railroad Company for such lands or materials and damages aforesaid, and pursuant to the provisions of said act and for such further or other order, as may be agreeable to law, as to the said Justice might seem just and proper.

Wherefore I, said Joseph D. Bedle, Justice as aforesaid, do appoint and assign the 5th day of December next, at ten o'clock in the forenoon, at the Hudson County Court House in Jersey City, said county, State of New Jersey, as the time and place for the application made in said petition, and do hereby direct the said company to give at least ten days' notice in writing of the time and place so assigned to the Morris and Essex Railroad Company, the Delaware, Lackawanna and Western Railroad Company and the Jersey Shore Improvement Company, by serving a copy of this order on the Presidents of each of said companies, or, in their absence, respectively on those severally acting as such.

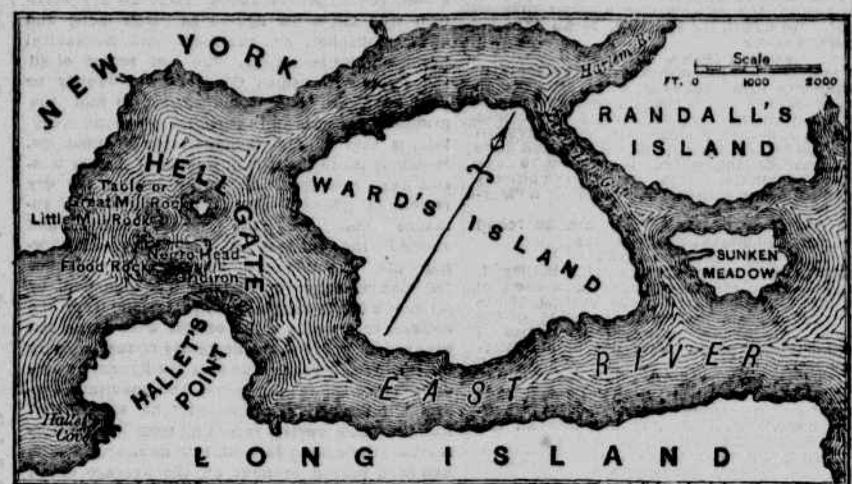
J. D. BEDLE,
Justice Supreme Court.
November 21, 1874.

A combination of railroad interests has been formed to prevent the construction of this tunnel. The Erie, the Pennsylvania and the Delaware and Lackawanna have had a conference in regard to their ferry interests, which would be seriously affected by the construction of the proposed tunnel. They have, therefore, determined to form a combination to prevent the construction of the tunnel, and the legal contest has now been commenced.

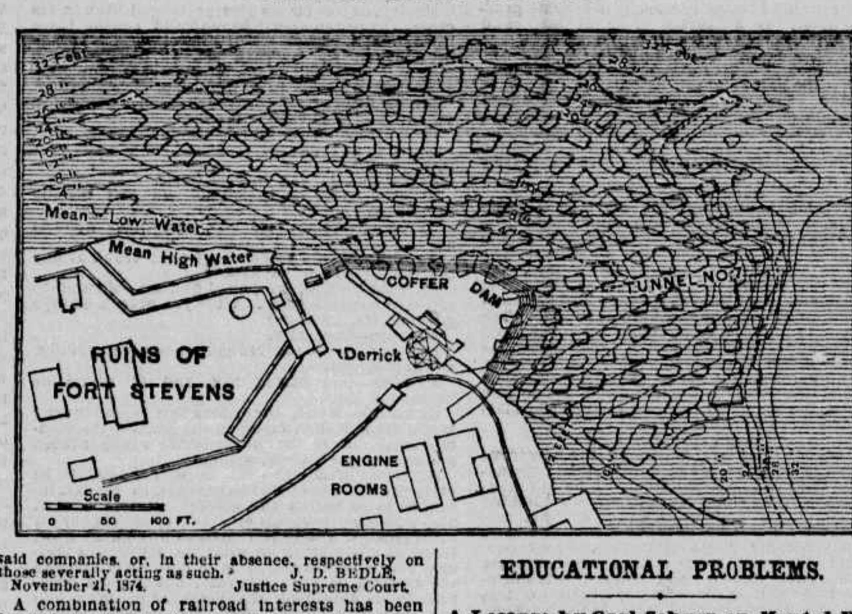
The papers in the case were served yesterday. The question will involve the right of the city to open streets to the water front after that has been removed by filling in, and the right of any company to prevent access on the ends of streets to the water for sewerage or other purposes. In the meantime the workmen at the tunnel have erected buildings which will enable them to pursue their operations during the winter.

HELL GATE.

Diagram Showing the Extent of and Method Pursued in the Rock Excavations.



PLAN OF EXCAVATIONS



THE POSTMASTER GENERAL.

The New Minister Receiving High Compliments from Bostonians—A Little After Dinner Speech on Saturday—Interesting Observations of Russian Life—The Efficacy of One "One Man Power."

BOSTON, Nov. 23, 1874.

Postmaster General Jewell, notwithstanding his reputed activity and usefulness in the important department of the government which President Grant has intrusted to him, manages to find time and inclination to become a sort of lion of the period. His visit to Boston has been characterized by a series of ovations ever since he arrived in the city, and for the many flattering attentions shown him by the amiable and solid men of the Hub he has manifested a feeling of profound gratitude. Immediately upon his arrival, last Friday morning, that highly respectable and eminently ancient organization known as the Board of Trade took him in charge and had a public exhibition of the distinguished visitor at their elegantly carpeted rooms down on State street. The admirable speech which Mr. Jewell made on the occasion was a source of delight to the "solid men" of the town. The day following the eminent Cabinet officer was again the hero of the passing moment, and numerous and hearty were the ovations which were showered upon him. It happened to be Saturday, just the day when the numerous social clubs with which the city abounds have their weekly sit-down, and all of them sought the presence of Mr. Jewell around their various festive boards. He ran in for a moment at all of the gatherings and was warmly greeted by the admiring hosts, and at the Commercial Club he remained for dinner and made a very happy and entertaining speech. The club met at the Parker House, and the banquet provided was, of course, most bountiful and elegant. Bouquets and wines were not dispensed with, and the company was very fragrant and jolly before the festivities were over. The company present included such men as Congressman Pierce, Congressman Stowell, of Virginia; Congressman Williams, of Massachusetts; Mayor Eastman, of Poughkeepsie, and General Burt, the Postmaster now here in Boston.

When the repast was finished Mr. Allen, the president of the club, alluded in complimentary terms to the distinguished guest who was with them, and in the midst of enthusiastic plaudits

MR. JEWELL RESPONDED.

He congratulated Boston on the firmness with which it has withstood the panic, and promised them his influence in furnishing all needed postal facilities. He reminded them that their Congress made the laws, passed the appropriations and raised committees to see that the money was used judiciously, and explained to them that committees could not go one atom beyond the powers delegated them by Congress. He thought Boston, being the Hub, and bearing the weight of a great literary reputation, should have larger facilities than most cities. He had the misfortune to hail from a democratic State, and, inasmuch as "misery loves company," he did not pity Bostonians for being under a democratic Governor, as he believed they deserved it. He gave a very interesting account of the Russian government, as he saw it in his capacity of Minister, and he likened the one man power of that government to the public opinion of this country, which he said could be made equally effectual if every one would make it his especial business to detect and punish crime as effectually as they do under the rule of one man only responsible to himself. In all the time he had been in Russia he had never heard of a defalcation by a public officer.

In his opinion, we had in this country too many lawyers. There they had less of them, and criminals were indicted and tried and the culprit had begun his punishment within the space of one week. It was the certainty of punishment that gave a wholesome dread of becoming amenable to the laws. The expenses of the government of 80,000,000 of people was not half the amount of that spent in governing the 40,000,000 of Americans. He gave an interesting account of Russian currency and the mode of banking, giving also the amount of the debt of the great Empire, which he placed at $200,000,000 only, while all paper was held equal to specie. Banks were also used there as places of safe deposit, and all the certificates of Russian indebtedness could be found in the vaults of the Imperial Bank of St. Petersburg, being held entirely by a few old families. The Czar spends annually about 8,000,000 roubles. A few nobles live as high as 1,000,000, and many others subsist on 500,000.

From this he passed to a most interesting account of railroads in the Russian Empire. The government allows individuals to construct them, guaranteeing five per cent, and if the income falls short the money is taken from the public Treasury to make up the deficit to stockholders. A very large number of railroads are owned and run by the government, and so directly accountable are the officers that no such things as defalcations are dreamed of. In no city was life and limb as safe as in St. Petersburg. It is well lighted, well sewered and has a most efficient police, and all this is done by one man, directly responsible to the one man power. The salary of this most efficient man, who is at the same moment mayor, alderman, council, street commissioner and all minor officers combined, is 500,000 roubles, enough to permit him to live respectably.

EDUCATIONAL PROBLEMS.

A Lecture by Carl Schurz on Mental Development—Practical Hints to "Our Girls."

The Hon. Carl Schurz last night delivered a lecture on "Educational Problems," in Plymouth church, Brooklyn, under the auspices of the Franklin Literary Society. There was an audience that more than half filled the house. The lecturer was introduced by Mr. W. Williams, one of the officers of the society.

Mr. Schurz said that he proposed to speak seriously of serious things. In no country is the subject of education discussed more thoroughly than in the United States. We are in the habit of referring to a higher order of education as a specific for crime; we point to an efficient popular education as a remedy. But when the question arises of what particular method should be adopted, the trouble begins. In discussing a very few points, he would have little to say that was new. Education should not teach us only what we are to know, but how to live, labor and to enjoy. The circumstances under which we live are very different to those surrounding our grandparents. The discoveries of the nineteenth century have made the art of living very difficult; if a man is to succeed in life he must know a great deal more than his forefathers. Yet the time we have to do this is the same. How, then, should the time be employed? The main thing is to kindle and enforce in the impressible brain the disposition to learn more when the teacher has passed away from his side. The training and discipline of the mind ought to be the first aim of intellectual education.

WHAT JOHN STUART MILL DID.

What can you do with a mere baby? The putting of John Stuart Mill at three years of age to learn Greek was not an objectionable thing, on the usually supposed ground that it would destroy the brain or overburden it. The infant brain is a very receptive one. Parents ought to teach their children how to see correctly, how to hear correctly and the art of acquiring the accurate appreciation and reproduction of that which has been seen and heard. How is it, it may be asked, that intelligent people who have eyes should not be able to see correctly? It is not the eyes at all. It is the education of the perceptive faculties. What is true about seeing is equally true of hearing. Nothing will so lead to usefulness and success in life, as the conscientious turning over in your mind of what you see and hear. It is emphatically the duty of the mothers, brothers and sisters to practise this on the little ones. What is done with objects seen by the eye should be done with objects as seen by the mind. Only let brothers and sisters earnestly try to educate little ones and they will educate themselves. This is the first branch of education, namely, how to learn. The child is then turned over to the teacher. It is, I am sorry to say, the practice in the school to teach many things with big names. This is conducted on the system of question and answer and is especially designed for the development of human stupidity. To exercise the memory is good, but he that relies only on the memory runs the chance of being a very great dunce. When can you and I say we know such a thing? Not when we have merely remembered it, but only when we have thoroughly comprehended the thing which we have sought to memorize.

SELF EDUCATION.

The effect of early education is to make the mind active and receptive; in one word, to fit men for that self education which is the duty of every man and woman. The real difficulty is when parents think that their duty is accomplished if they keep their children fat, warm and healthy. Of all hard labor that of teaching is the most miserably paid. If teaching is to be well done it must be regarded as a profession and as a life sacrifice. How does all this apply to the education of the female sex? Neither a woman nor a man can know too much. It is certainly true that the education of girls should be so directed that they can earn their own livelihood, without dependence upon others. No system of education should stimulate women to work their way through life independent and alone.

THE DUTY OF MARRIAGE.

I think it is the calling of women to become married. (Cheers.) It is as much the duty of a woman to become a wife and mother as it is for a man to become a husband and father. Good education should therefore be directed to this end; and especially is it more important that this should be the end of woman, for the family circle makes the State. Woman in her home and as a wife and mother has the highest duties to fulfil. Our girls should learn how to inspire and manage a home. I think the practice of married couples living in boarding houses and hotels is exceedingly destructive of this, and a very large proportion of the domestic troubles we encounter in this country is traceable to this life of boarding houses and hotels. Very much of the reason is this, that our girls have not been taught to manage a home. For a home it is not necessary there should be Turkish carpets and silks, but it does require a wise economy and good management. A home does more than any other institution to make a nation wise and patriotic. (Cheers.) A boarding house can never be this home. (Cheers.) Education should then be directed to enforce upon our girls sound knowledge as to practical economy and household management. When the habits of the female sex are such as to cause marriage not to be thought of because it is too risky an investment, and when the bearing of children is regarded to be too troublesome, then the nation is fast decaying and vice will pervade the whole social body. (Cheers.) Woman is the natural centre of luxury and in her atmosphere it grows rankest. Equally true is it with the virtues, and with woman are the virtues most completely developed. Our girls should, therefore, be well instructed in household economy. This should not be confined merely to housework. There is much to be learned as to the quality of food.

Mr. Schurz concluded by a summary of the points he had dwelt upon.

SCIENCE AND HUMOR.

Opening of the Season of the Geographical Society Last Night.

HAYES IN ICELAND.

Pictures of the Polar Regions and Curiosities from Lapland.

A large, highly respectable and evidently much interested audience witnessed the opening of the season of the New York Geographical Society last night at Association Hall. Every seat in the body of the hall and the gallery was filled, and the largest proportion of the audience was composed of ladies. The fact was noticeable and remarkable, as the proceedings of scientific bodies of the distinction of the Geographical Society are usually supposed to be somewhat of a heavy nature, and the compliment paid the members by the presence of so many young and eminent social auditors was very flattering. It was quite apparent the ladies had heard and read a great deal about Dr. Hayes and Mr. Du Chaillu, and perhaps wanted to hear more of these gentlemen and maybe to have a look at them. At all events they were present last night in full force, and those who expected to be treated to prosy scientific discourses on abstract subjects were agreeably disappointed, for there was a good deal of fun thrown in with stores of information. Both were so blended, too, that the teaching slipped into the mind quite unconsciously, and people on leaving the hall were surprised to feel how much more familiar they had become with Iceland and Lapland through all that laughter. Some gentlemen on the front seats were evidently astonished at the growing interest in the society manifested by the public, by remarks they made during the evening to their companions; but if the society can maintain

THE PLEASANT INTEREST

thrown around its stately subjects by Dr. Hayes and Mr. Du Chaillu last night, in future sessions the compass of Association Hall will not long remain sufficient for them. Dr. Hayes' description of the method of chaining the attention and tail of an Icelandic pony was very natural and humorous, and Mr. Du Chaillu's depiction of all the reindeer to be seen when the animals are hunting for moss in the snow, was strikingly realistic and agreeable. Each had a power of attracting and fascinating the listener's attention peculiarly his own, and both were equally strong, although widely different. Dr. Hayes' pictured things as they were and he saw them, but he had the tact to choose the humorous view of them and turned that to his audience, making natural recognition readier and more lasting. Much of the pleasure derived from Mr. Du Chaillu's very instructive discourse upon his recent travels in Lapland was due to the intensely real manner in which he describes all he saw and passed through, his choice of words now and then and his foreign manner. Among the prominent persons present were noticeably Chief Justice Daly, Colonel F. A. Conkling, George Cabot Ward, William Renser, Colonel F. Bailey Meyers, General G. W. Cullem, Judge William E. Curtis, Samuel B. Ruggles, Francis A. Stoat, W. H. H. Moore, James M. Bailey, Professor Theodore W. Dwight, Ehal F. Hull, William Jones Hoppen, Dr. E. R. Stragnick, Isaac Beinreimer, Noah Davis, Henry Morris, Ed Mathews, S. L. M. Barlow, Peter Cooper, Richard Lathers, G. H. Moore, General James Grant and Dr. Gruening. The following gentlemen were elected fellows in the usual form:—Captain Wilson Defendorf, James Dodd, Lieutenant Edward Hunter, United States Army; Rev. James M. Buckley, George H. Church, George J. Powers, Lieutenant G. W. Coster, United States Navy; Ira E. Wairaven, John S. Hittell, General J. B. Kiddoo, United States Army; Henry W. Bookstaver, Benjamin Wood, Benjamin Wood, Jr., Robert L. Fabian, E. R. Meade, George B. Wooster, Harlow M. Hoyt, Austen G. Fox, Walworth Crane, Charles C. Haight, Henry E. Pellew and S. Fenton, Jr.

At eight o'clock precisely the attention of the audience was claimed by Chief Justice Daly, who opened the proceedings, and it was held without cessation during the entire evening.

ON THE STAGE,

beside the lecturers, during the evening, were a number of trophies and curiosities brought from Lapland by Mr. Du Chaillu, which he explained as he went on, and of which he made a most important element of the evening's entertainment. Among these was a stuffed reindeer, used by Mr. Du Chaillu while in the country; two sleighs—a very nicely finished one, which he called a swell one. He had that, he said, because, of course, he was a swell, and a stronger, more workaday one, which, he said, was his "down the side of mountains conveyance"—pieces of trees remarkable for their thickness and age, Lapland skins and costumes and many other strange, characteristic things belonging to the nomadic Laplanders. Chief Justice Daly, in opening the proceedings, said:—In opening our meeting it is my melancholy duty to refer to the loss we have sustained during the past summer in the death of our venerable ex-President, Mr. Henry Grinnell. I shall not at present enter upon any lengthened account of his life and services, as it is due to his relation to the society, the country and to the geographical world that a memoir should be prepared by a committee, with adequate resolutions, and submitted on a future occasion. Mr. Grinnell was one of the founders of this society. It was to his efforts, together with those of the late George Folsom, that the first step was taken, a quarter of a century ago, for the establishment of the society; and at the meeting at which it was organized, in 1851, he was elected President, a position which, with his characteristic modesty, he declined. But when Mr. Bancroft had been chosen President he consented to serve as First Vice President, a position which he held for many years. When the late Dr. E. L. Hawks withdrew from the Presidency Mr. Grinnell consented to accept the position, and served during the years 1862-3, when he declined a re-election and I became his successor. He still continued, however, his active relations with the society, taking the liveliest interest in all its proceedings, and was present last winter at the public reception given by the society to the crew of the Polaris, when he brought with him and unfolded a flag which he had originally sent on the Wilkes expedition to the Antarctic, and which he afterward sent four times to the Arctic in the respective expeditions of De Haven, Kane, Hayes and Hall. It is to him we owe the first American expedition to the Arctic. He furnished and provisioned the two vessels for the expedition of De Haven in search of Sir John Franklin, which started in May, 1850. In conjunction with the late George Peabody he manned and provisioned the brig Advance, commanded by Dr. Kane in the second expedition of 1853. He was a large contributor to the expedition commanded in 1861 by Dr. Hayes, and he alone furnished the means to send Captain Hall on his first journey to Frobisher's Straits in 1860 in search of Sir John Franklin. It was also chiefly through his instrumentality that Captain Hall was able to make his second journey in 1863, in which he passed five years in the scene of his previous explorations. It was to the means, in fact, which he supplied that Captain Hall obtained the experience and training which led Congress to confide to him the command of the Polaris in the last expedition. In that beautiful poem of Campbell's, written on a blank leaf of "La Pérouse's Voyages," there is an expressive couplet, suggested by the strait through which the French navigator passed on the coast of Japan, and which bears his name. It is in these words:—

> Fair Science on the ocean's azure robe
> Still writes his name in picturing the globe.

And so it has been and will be with Henry Grinnel. In that long line of coast known as Grinnell Land, which beginning in Smith's Sound extends along the west side of Kennedy's Channel, his name is imperishably written and will remain forever a monument to the enterprising spirit, the benevolent feeling, the broad and generous aspirations of an American merchant.

As Judge Daly was retiring a gentleman in the audience, a member of the society, begged to interrupt him, and proposed that Lieutenant Wheeler, of the United States Army, a celebrated explorer, be invited to a seat on the platform. Judge Daly introduced Lieutenant Wheeler, and afterward Dr. Hayes, who advanced to the lights and said:—

MR. PRESIDENT AND FELLOWS OF THE AMERICAN GEOGRAPHICAL SOCIETY—I am to-night to give a brief preliminary report of my recent journey to Iceland, which was performed last summer, jointly with Mr. Cyrus W. Field, as a representative of the society at the millennial celebration. Some portions of the details of the journey have already been published in the columns of the NEW YORK HERALD, to which they were furnished at the request of Mr. Bennett. Upon arriving in London I found Mr. Field already there, but as it was impossible to obtain suitable accommodations on board the regular mail steamer we were to charter one of our own. Our wishes becoming known to the London and Edinburgh Steamship Company, we had placed at our disposition the fine steamer yacht Albion, Captain A. Howling, master. To the company's agent in Leith and to Mr. William Nelson, of the well known publishing firm of Edinburgh, we became indebted for every possible assistance, and but for their generous co-operation we should hardly have had success in our business. We arrived at Reikiavik, the capital of Iceland, in due season to take part in the first ceremonies, August 2. Meanwhile the King of Denmark, Christian IX., had arrived, and Germany, Norway, Sweden and France were there represented by ships of war. The occasion was one of unanticipated dignity and ceremony. The people were, however, impressed with the importance of the occasions that the display was not in excess of their expectations, and they bore their part in it with the traditional and high breeding of their Norse ancestry. Our credentials being delivered to the proper authorities, we were courteously received, and situations were assigned us in accordance with rules previously laid down for the reception of the representatives of learned societies. These were always near His Majesty the King, the Governor of the island and the Mayor of Reikiavik. The formal occasion embraced divine service, the cathedral rival proceedings at Thingvalla and two public banquets. The cathedral services were very impressive. A native hymn, called "Iceland's Thousand Years," was sung by the entire congregation with marvellous effect. The music was fine, the voices excellent, and the occasion being one of deep feeling to every Icelander it is not surprising that there was exhibited a deep emotion. Never before have a people celebrated the thousandth anniversary of an organized government, substantially following the organic plan, and certainly it would be impossible, at the present time, for any other people to celebrate, in this sense, its millennial, and claim consistently to preserve their language, laws and social customs practically unimpaired by the lapse of time. After the church services the King, at his banquet, arose and drank prosperity to the future of Iceland; a hundred cannon echoed the sentiment, and, amid the wildest enthusiasm, the new constitution was proclaimed. This gives Iceland practical freedom from Denmark, and no doubt it will tend to greatly develop the country, which possesses many resources needing cultivation to make them profitable. At present the chief exports are codfish, salmon and wool. While the cultivation of these industries does not create any large degree of individual wealth they are productive of general competency. I found the necessaries of life possessed in abundance, luxuries were not uncommon, and the people were happy and content. The school system is most admirable, and the Icelanders show a remarkable greed for learning. In the humblest peasant hut you always find books. Some of our English classics are translated and published in Reikiavik, and are greatly in demand. The bookstore was crowded whenever I visited it. Crime is almost unknown, the common jail not having had an occupant, except the jailer and his family, these twenty years past; not indeed until this last summer, when the King's staff used it as headquarters. Reikiavik contains about 17,000 inhabitants, and is mainly composed of comfortable frame houses, roofed with slate, and surrounded by little gardens, in which are cultivated potatoes, cabbages and other common garden vegetables. None of the cereals, not even barley and oats, will ripen, though it is said they were grown there in former times. The trees mentioned in the ancient Sagas have wholly disappeared, if we except the low stunted birch and willow bushes, which, however, are not found near the coast. The timber needed, even for the small farm houses of the interior, is brought from Norway. Yet the bush supplies a sufficiency of fuel in those places, while near the coast, as at Reikiavik, peat alone, of which there are exhaustless beds, is the only fuel, except occasional supplies of English coal. The present aspect of the island now is that of a forestless girdle of green, enclosing a volcanic desert, and inhabited by about 70,000 people. This girdle is in places but a few miles wide, but in others it extends for a considerable distance up the valleys, such as those, for instance, through which flow the Heita (white) and Thorso rivers. In the valley of the former are found the geysers, long known as the most remarkable spouting springs in the world, until Professor Hayden's recent discoveries in the Yellowstone region. These I had the good fortune to examine with minute care. The full details of my measurements and investigations there I feel could not be crowded into the short space of time allotted to me this evening, and I reserve them, therefore, for another occasion. The Stroker Geyser spouted quite 200 feet for our benefit. The Doctor here took occasion to refer to the map and give a general view of Norse migration from Norway to Iceland by railroad and America after giving a fund of interesting information as follows:—But my chief concern is rather with my reception as representative of the society as the commission which was brought to a close on the classic ground of Mingrello on August 7. Nothing, it seems to me, could possibly exceed the grandeur of the scenery of this great lava field, crooked and distorted as it is in every direction. The famous Law Mouch or Logborg, where the Althings met present even a more grand and fearful appearance than the old Sagas describe it. Our reception here in a proud manner, the reading of our credentials and our reception by the King at the close, will long be remembered, taking place, as it did, by the side of the rising waterfall of the famed Oxara River, and beneath the giant frowning lava cliffs of the Almana-gia. My companions during this somewhat singular reception were, besides Mr. Field, Mr. Bayard Taylor, Mr. Murat Halstead, Professor Kneeland, Mr. Gladstone and Professor Eiricker Magnuson, a native Icelander, whose admirable translation of the Saga will be recalled by all interested in Norse literature. From all these I met with the heartiest co-operation. Mr. Taylor has recently published an admirable account of our wanderings in his "Egypt and Iceland." At one time it was hoped our friend Mr. Paul Du Chaillu would join us; but that eminent traveller seems on the whole to prefer to travel alone, and perhaps he is wise, and, judging by his mind, you would certainly say so; for, whether sweltering in the malarial jungles of Africa or drinking in the glories of the land of the midnight sun, he is ever an active observer of men and things, and I am rejoiced to be associated here to-night in the general illustration of Norseland with one who has done so much to promote our knowledge of strange places and to deserve in its best sense the title of traveller.

As Dr. Hayes closed his remarks Judge Daly again came forward and the second time introduced M. Du Chaillu. This gentleman began by saying he had often got into big scrapes, but that was the biggest scrape he was ever in. Still, he said, I will do the best I can. He went on to explain that he did not like the sea, but that he was at home on the mainland. After a short description of the coast of Lapland, which was the wildest he had ever seen, he gave a description of the height and majesty of the glacier to be seen there and the mountainous waterfalls that abound along it. The people along the coast are all fishermen, he said, and I was a fisherman too for a while, but I didn't like it. After explaining the nature of the government of the people he showed the state of the country, saying there were trees twenty feet in diameter at 70 degrees north latitude. Lapland is the country of the reindeer, and its people are nomads. They live a good deal in tents, but those tents are made of wool and not a bit like those I have seen in some of our weekly illustrated papers. I had an idea, before I went to Lapland, that the people were dark and something like the Esquimaux, but I found I was mistaken when I got there. They are fair and ranging in size from four feet four to four feet six. The women, when young, are very beautiful, but when old are ugly. This comes of their cheek bones, which grow up or protrude more as they age. All the Laplanders can read, and all go to church. They have a minister and schoolmaster in every district in Norway and Sweden, and you see the result in the people. Mr. Du Chaillu then pointed out on a map the district he had travelled over in those countries, and at the end of his address put on the Laplanders' dress for the benefit of the audience, who seemed not only surprise, but delighted. The evening entertainment closed with a series of views of Iceland, which Dr. Hayes explained as they were shown.

OCEANIC LIFE.

A meeting was held last evening at the Lyceum of Natural History, No. 64 Madison avenue, at which a very interesting collection of some of the rarer forms of oceanic life was exhibited. These were intended to have been exhibited and explained to the audience by Captain J. H. Mortimer, who has made their collection in the mid-Atlantic Ocean a specialty, but, unfortunately, that gentleman was ill. In his absence, at the request of Mr. J. S. Newberry, the President, Professor Martin explained the names of the various small creatures of the deep, and the specimens were handed round for examination. The greatest interest was evinced in the rare collection, especially in the pteropods, and it was explained to the meeting that the collection is intended for the Museum in the Central Park. Captain Mortimer, who commands one of the ships of the Black Ball line, trading between New York and Liverpool, has had the cabin of his vessel fitted up as a museum of these curiosities, and is constantly adding to the collection. He has also presented a large assortment of them to the Liverpool Museum.

PEOPLE WE MEET.

Lecture By Rev. T. De Witt Talmage.

The Rev. T. De Witt Talmage lectured last evening in the Presbyterian church, in Spring street, near Varick on "The People we Meet." Considering the inclement weather and the condition of the streets there were a goodly number present. Among some of the people we meet he mentioned the man of bad manners and claimed that all the clothes a tailor's goose could hatch out in a month of Sundays could never make him a gentleman. He thought, too, that a lady could not be made by all the dressmakers, milliners and perfumers in Paris or "any other seaport," and amused his hearers into a hearty laugh by some quaint descriptions and stories of females who thought they were ladies. Then, too, he dilated upon the "mean man," some of those fellows who are "pisen all the way up the back"—mean all through.

A VICTIM OF GRIEF.

NEW YORK, Nov. 23, 1874.

TO THE EDITOR OF THE HERALD:—

In your notice of the death of Mr. Bellew, in Sunday's HERALD, you narrate a conversation with his landlord in which Bellew is stated to have been lately in our employ and coming to us for money we owed him. He had worked for us, making sales on commission, and though his account was overdrawn more than $200 we gave him money to bury his wife and last week lent him a small sum. After his death we gave his little boy money for his passage home to New Haven. So, you see, we are not guilty of the heartless conduct which might be inferred from the story of this unfortunate man's death as published. Yours, truly,

FRANK BOEHM & CO.